

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled)
2. (Currently Amended) An evaporator according to claim [[1]] 19 wherein each tape is twisted such that its edges form helices that lie along the interior surfaces of the tubes in which they lie.
3. (Original) An evaporator according to claim 2 wherein each tape has a length to diameter for a 360° twist of about 5 to 25.
4. (Currently Amended) An evaporator according to claim [[1]] 19 wherein the tape is anchored at one end of the tube through which it extends.
5. (Currently Amended) An evaporator according to claim [[2]] 4 and further comprising a bar extending transversely across each tube that contains a tape at the end of the tube at which it is anchored; wherein the bar is attached to the tube across which it extends; and wherein the tape for the tube is secured to the bar.
6. (Original) An evaporator according to claim 4 wherein each tape is anchored to the tube through which it extends at that end of the tube which is at the supply header.
7. (Original) An evaporator according to claim 2 wherein the width of each tape is less than the inside diameter of the tube through which it extends.

8. (Cancelled)

9. (Currently Amended) The combination according to Claim [[8]] 22 wherein the tapes are twisted such that their edges form helices that lie along the inside surfaces of the tubes.

10. (Currently Amended) The combination according to claim [[8]] 22 wherein each tape is anchored at one end of the tube through which it extends.

11. (Original) The combination according to claim 10 and further comprising a bar extended across and is secured to each tube at the end at which the tape is anchored; and

wherein the twisted tape in that tube is attached to the bar.

12. (Cancelled)

13. (Currently Amended) The combination according to claim [[12]] 22 wherein the twisted tape in each tube extends from the inlet and through at least the region of the tube in which the mist exists.

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (New) A once-through evaporator for a steam generator, said evaporator comprising:

a supply header;

a discharge header spaced from the supply header;

tubes extending between the supply and discharge headers and at their ends opening into the headers;

twisted tapes in at least some of the tubes and having their edges located generally along the inside surfaces of those tubes; and

water in and flowing through the tubes and headers, the water in the supply header and the regions of the tubes leading away from the supply header being in the liquid phase, the water farther along in the tubes where the twisted tapes are located being in the form of a mist that is directed against the inside surfaces of those tubes by the twisted tapes, whereby the interior surfaces of the tubes in the regions of the mist remain wetted by the mist.

20. (New) A once-through evaporator according to claim 19 wherein the water in the discharge header includes saturated steam .

21. (New) A once-through evaporator according to claim 19 wherein the water in the regions of the tubes approaching the discharge header includes saturated steam.

22. (New) In a steam generator including a duct through which hot gases pass, a superheater and an economizer located in the duct, with the superheater being located upstream from the economizer with respect to the flow of the gases, a pump for delivering liquid water to the economizer, an improved once-through evaporator located in the duct between the superheater and the evaporator and being connected to the economizer and to the superheater such that liquid water from the economizer flows into the evaporator which converts it into a mist flow and then into steam that is directed into the superheater where it leaves as superheated steam, said evaporator comprising:

a supply header;

a discharge header spaced from the supply header;

tubes extending between the supply and discharge headers and being in the duct so that the hot gases in the duct pass over the tubes;

water in headers and tubes, the water being in the form of a liquid in the supply header and a liquid where it leaves the supply header and enters the tubes, and in the form of a mist farther along in the tubes, and in the form of saturated steam where it leaves the tubes and enters the discharge header; and

twisted tapes located in the tubes where the mist is present, the tapes having side edges that extend generally along the inside surfaces of the tubes.